UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,123	03/31/2004	Gary W. Atkinson	Atkinson 3-1-28	9196

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2007*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   The amendment entered on 10/11/2007 has been entered and fully considered.

2.   Claims 1-18 are pending. Claims 1 and 10 are the base independent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

1.   **Claims 1-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kang et al (US 7, 280, 755 B2), hereinafter referred to as Kang in view of Chudak et al

(US 7, 308, 198 B1), hereinafter referred to as Chudak.

Kang teaches highly utilizable protection mechanism for WDM mesh network.

2.   Regarding **claim 1**, Kang discloses a method, comprising:

receiving one or more demands for service in a mesh network **(See Figures 4 and 5)**,

which network comprises a plurality of nodes interconnected by a plurality of links **(See**

Figure 8); and mapping each of the one or more demands onto a primary path and a

restoration path in the network to generate at least one path plan for the one or more

demands in the network **(See the demand or channel request in figures 4 and 5**

being mapped to a working and backup path), wherein the at least one path plan is

generated as a function of (a) one or more cost criteria associated with the at least one

path plan **(See Figure 5, step 6)**.

Kang fails to disclose a failure-related cross-connection criterion associated with the path plan.

Chudak teaches method for allocating protection bandwidth in a telecommunication mesh network.

Chudak teaches a failure-related cross-connection criterion associated with the path plan. **(See Figure 3 and Column 5:39-57)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kang's method a failure-related cross-connection criterion associated with the path plan. The motivation to establish such criteria is that it minimizes real time switch as stated in Chudak's Columns 4:23-25 and 5:50 that it minimizes unnecessary real time switches during failures.

3.   Regarding **claim 10**, Kung discloses a path manager for a mesh communications network **(From the discussion on Columns 2:45-55 and 7:1-10, it is clear that a central admission control entity exists running the algorithms shown in Figure s4-6 and hence some form of admission manager has to process the requested demands and can effectively be considered a path manager)**, the manager comprising one or more computing elements, wherein the manager is adapted to: receive one or more demands for service in a mesh network **(See Figure 8)**, which network comprises a plurality of nodes interconnected by a plurality of links **(See Figure 8 - NJ Lata Network topology)**; and map each of the one or more demands onto a primary path and a restoration path in the network to generate at least one path plan for the one or more demands in the network **(See the demand or channel request in**

figures 4 and 5 being mapped to a working and backup path), wherein the at least

one path plan is generated as a function of (a) one or more cost criteria associated with

the at least one path plan **(See Figure 5, step 6)**.

Kang fails to disclose a failure-related cross-connection criterion associated with

the path plan.

Chudak teaches a failure-related cross-connection criterion associated with the

path plan. **(See Figure 3 and Column 5:39-57)**

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to modify Kang's method a failure-related cross-connection

criterion associated with the path plan. The motivation to establish such criteria is that it

minimizes real time switch as stated in Chudak's Columns 4:23-25 and 5:50 that it

minimizes unnecessary real time switches during failures.

4.   Regarding **claims 2 and 11**, the combination of Kang and Chudak discloses a

method wherein the at least one path plan is generated by: calculating a first set of one

or more path plans that satisfy the one or more cost criteria **(Kang – See Figures 4**

and 5); calculating a second set of one or more path plans that satisfy the failure-related

cross-connection criterion **(Chudak - Column 5:39-57)**; determining whether the first

and second sets have any path plans in common; and if not, then, until the first and

second sets have at least one path plan in common, relaxing the one or more cost

criteria and recalculating the first set. **(See Chudak Columns 6:55-60 and 9:45-55 and**

Figures 10A and b show cost and the cross-connection criterion matching)

5.   Regarding **claims 3 and 12**, the combination of Kang and Chudak discloses a

method wherein the failure-related cross-connection criterion specifies a maximum

number of cross-connections that are changed in any node in the network following a

failure in the network. **(See Chudak's Figure 11 and Column 18:23-24)**

6.   Regarding **claims 4 and 13**, Kang discloses a method, wherein the one or more

cost criteria are a function of at least one of sharing degree, administrative weight, link

utilization, and available capacity. **(See Kang – Figure 6)**

7.   Regarding **claims 5 and 14**, the combination of Kang and Chudak discloses a

method, wherein the at least one path is generated by:

(a) calculating a set of node-disjoint path pairs for the one or more demands based on

the failure-related cross-connection criterion, wherein a node-disjoint path pair is

calculated for each demand; **(See Chudak's Figure 5 A-C and Column 19:33-40)**

Co) identifying primary and restoration paths for each node-disjoint path pair in the set

to generate a path plan for the one or more demands; **(See Chudak Column 11: 25-27)**

(c) determining whether the path plan satisfies the failure-related cross-connection

criterion; **(See Chudak – Column 11:1-20)**

(d) saving, when the path plan satisfies the failure-related cross-connection criterion, the

path plan; **(it has to save it in order to build the network topology)**

(e) repeating steps (a)-(d) to generate two or more path plans that satisfy the failure-

related cross-connection criterion; **(See Chudak Figure 10 B)** and

(f) selecting one of the path plans based on the one or more cost criteria. **(See Chudak**

Columns 6:55-60 and 9:45-55 and Figures 10A and b show cost and the cross-connection criterion matching)

8.   Regarding **claims 6 and 15**, the combination of Kang and Chudak discloses a method, wherein, when the path plan satisfies the failure-related cross-connection criterion, steps (b)-(d) are repeated with a constraint that excludes each and every saved path plan. **(See Chudak – Column 18:55-60 the FINDPXT is subroutine that is run iteratively)**

9.   Regarding **claims 7 and 16**, the combination of Kang and Chudak discloses a method, wherein, steps (b)-(d) are repeated only until the path plan fails the failure-related cross-connection criterion. **(See Chudak – Column 16:60-67)**

10.   Regarding **claims 8 and 17**, the combination of Kang and Chudak discloses a method, wherein, when the path plan fails the failure-related cross-connection criterion, steps (a)-(d) are repeated with a constraint that excludes each set of node-disjoint paths. **(See Chudak Columns 6:55-60 and 9:45-55 and Figures 10A and b show cost and the cross-connection criterion matching)**

11.   Regarding **claims 9 and 18**, the combination of Kang and Chudak discloses a method. wherein, when calculating a set of node-disjoint path pairs for the one or more demands per step (a) fails to find a feasible solution, the failure-related cross-connection criterion is relaxed.**(See Chudak – Column 18:30-35)**

Response to Arguments

1.   Applicant's arguments see Remarks, filed on 10/11/2007, with respect to the rejection(s) of claim(s) 1 and 10 have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a

new ground(s) of rejection is made in view of Kang et al (US 7, 280, 755 B1) and

Chudak et al (US 7, 308, 198 B1).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Habte Mered whose telephone number is 571 272 6046.

The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Doris H. To can be reached on 571 272 7629. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER

HM
12-24-2007